~~a display that displays said information represented by said~~ demodulated signal;

an attaching member that attaches said detector in a position that allows detection of light transmitted from said transmitter;

a signal generator that generates a second transmission signal; and

a laser source that emits a light and controls a state of polarization of said light on the basis of said second transmission signal; and

full duplex communication is carried out between said first ~~transmitter/receiver and said second transmitter/receiver.~~

REMARKS

Reconsideration of the subject application is respectfully requested. Claims 1-8, 15 and 16 were cancelled and replaced by new Claims 50-62. Claims 1-8, 15 and 16 were rejected as anticipated by Sakanaka or unpatentable over Sakanaka in view of Funke. These rejections are respectfully traversed, especially in view of the foregoing amendments.

Sakanaka discloses a transmitter/receiver for optical communication. An object of the invention of Sakanaka is to provide an optical communication system in which low energy light is utilized to avoid eye damage. The system is further designed to minimize absorption of the utilized light in air during optical communication.

Referring to the second embodiment of Sakanaka (see, for example, Fig. 16), polarization planes of transmitted and received light in a communication operation are caused to differ from one another by 90 degrees. Specifically, a polarization beam splitter is employed to divide transmitted light and received light. However, the purpose of such alignment is, as described in column 17, beginning at line 28 of the specification, simply to enable bi-directional communication to be carried out.

Thus, two important features of the present invention are not disclosed or suggested in Sakanaka. Namely, neither modulating a polarization plane of transmitted light on the basis of a signal input at a transmitter nor

demodulating a polarization state of received light into a signal at a receiver, as carried out in the present invention, are disclosed in Sakanaka.

In the first embodiment (see, for example, Fig. 15) of Sakanaka et al., it is disclosed that a circuit for controlling energy of a laser is provided to enable communication to be carried out by modulating an intensity of light used. However, there is no mention made of the feature of the present invention of controlling a polarization of light. An object of the present invention is to carry out an accurate and reliable communication operation in which susceptibility to external light in a living body dispersed more strongly than the air is encountered.

To achieve the stated object, in the present invention a particular signal is associated with a particular polarization state. Specifically, "1" and "0" are assigned to an X-polarization and a Y-polarization, respectively. Such assignment, however, constitutes only one possible example in the present invention, and unlike in Sakanaka et al., it is not necessary to employ light having polarization planes differing from one another by 90 degrees, and light having any polarization state can be used in the present invention. Thus, it will be readily apparent that Sakanaka does not disclose an important feature of the present invention, as specifically claimed.

Funke does not disclose the teachings missing from Sakanaka. Funke discloses a system for communication between a device implanted in a living body, such as a heart pacemaker, and a device provided outside the body. It is the stated object of Funke to provide a reliable, simple and versatile communication system.

Specifically, in Funke, transmitters and receivers are provided in each of a pacemaker and an outside device. Communication between the elements is carried out by using an electromagnetic wave having a wavelength of 10~100kHz. It is evident then, that the method and means of Funke are not relevant to the present invention, which employs visible or near visible light to effect communication.

In the present invention, by using visible light, it is possible to overcome a problem that arises in a communication system such as that of Funke where

light having a long wavelength is subject to interference by other, widely used, communication devices, which interference results in an unreliable system.

It is important to note that the present invention has not been made simply by changing a wavelength of light employed in Funke, and that a fundamental and noteworthy feature of the present invention is that it effects communication by modulating a polarization state of light, thereby overcoming a serious defect in the effectiveness of the prior art that arises as a result of modulations in light intensity.

In view of the foregoing, it is respectfully submitted that Sakanaka, neither alone nor combined with Funke discloses the features of the present invention as specifically claimed.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration of the present application.

Respectfully submitted,

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